STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

IN THE MATTER OF THE PETITION	)	
OF SUGAR CREEK UTILITY	)	**CAUSE NO. 43579**
COMPANY, INC. FOR APPROVAL OF	)	
A CHANGE IN RATES AND CHARGES	)	

SUPPLEMENTAL TESTIMONY

OF

ROGER A. PETTIJOHN – PUBLIC'S EXHIBIT #3S

ON BEHALF OF

THE INDIANA OFFICE OF UTILITY CONSUMER COUNSELOR

APRIL 23, 2009

Respectfully submitted by

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CERTIFICATE OF SERVICE

This is to certify that a copy of the foregoing has been served upon the following attorney of record in the captioned proceeding by electronic mail on April 23, 2009.

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TESTIMONY OF ROGER A. PETTIJOHN
CAUSE NO. 43579
SUGAR CREEK UTILITY COMPANY, INC.

I. INTRODUCTION & BACKGROUND

Q: Please state your name and business address.

A: My name is Roger A. Pettijohn, and my business address is 115 West Washington Street, Suite 1500 South, Indianapolis, Indiana 46204.

Q: By whom and in what capacity are you employed?

A: I am employed by the Indiana Office of Utility Consumer Counselor (OUCC) as a Senior Utility Analyst for the Water/Wastewater Division.

Q: What are the duties and responsibilities of your current position?

A: My duties include evaluating the condition, operation, and planning of water and sewer utilities that are subject to IURC jurisdiction.

Q: Are you the same Roger A. Pettijohn that has submitted pre-filed testimony in this Cause?

A: Yes.

Q: What is the purpose of your supplemental testimony?

A: The purpose of my supplemental testimony is to address the water quality issues raised by Riley Village residents at the April 15, 2009 IURC Field Hearing. I will also suggest some remediation practices that have proven to be useful.

Q: Prior to the field hearing, were you aware of the quality of service complaints?

A: I was not aware of its extent until attending the Field Hearing, where four of the seven oral testimonials involved water quality problems. The extent of the problem was confirmed in discussions with several homeowners after the Hearing.

Q: What is the cause of the apparent water quality problem?

A: Residents complained of water staining clothes and the water being discolored. The likely cause of the problem is dissolved iron that has come out of solution. The water that was entered into evidence at the Field Hearing (Public's Field Hearing Exhibit 2) was an example of water with dissolved iron having come out of solution. It is typical for well water in Indiana to have a high degree or concentration of iron greater than the USEPA recommended level of .3 mg/l. In many cases, the iron concentration is 3 to 4 mg/l or higher and when aerated or mixed with air ferrous iron that is in solution becomes oxidized to form ferric iron or rust that can then be seen in various shades of yellow to dark reddish-brown. Iron in the ferric or solid state can easily be filtered out at a treatment plant by purposefully oxidizing the iron so that it can be filtered by treatment facilities. Dissolved iron is always present in the water unless removed. Drinking water containing iron, whether in or out of solution, is not considered a health hazard. However, when dissolved iron comes out of solution, the water has an unpleasant appearance and can stain fixtures and clothing.

Q: What does Sugar Creek do to remove iron from the drinking water it sells?

A: Petitioner has no iron removal facilities or equipment. During my review I did not see any indication of practices that are helpful to remove iron (e.g. flushing of the lines).

Q: What can the home owner do to remove oxidized iron?

A home owner can purchase a filter at the store that is suitable for filtering iron as well as a number of other undesirable constituents if the filter contains activated carbon. One example is the commercially available Pur filter used for drinking water in a self-contained pitcher. Also, salt softening units are useful in reducing the staining effects of iron to some degree, although its primary purpose is to reduce water hardness in the form of calcium carbonate.

Q: What can Sugar Creek Utility do to address the iron problem?

A: The first course of action is to determine where the iron is being oxidized; that is, determine whether the oxidization is occurring at the water source (aquifer) or after the well head in the distribution piping. If iron bacteria in the aquifer are producing the rust, a shock treatment of chlorine at 1000 part per million with follow up flushing and testing is needed. Iron bacteria are stubborn and several treatments may be needed. If rust is being formed in the distribution system, a type of phosphate can be used to sequester or hold the iron in solution. Phosphate is applied in small dosages of approximately 1 part per million with a chemical feed pump that comes on or pumps when the well pumps.

Q: How might Sugar Creek Utility determine the source of the oxidized iron?

A: To determine if iron is coming from the aquifer, Sugar Creek can perform an "overboard" test (pumps to open discharge) on its primary well, which supplies the Riley Village residents,. If a slug of iron appears, pumping the well discharge will clear the water, though the problem may reoccur. But if iron bacteria are present, the well discharge will not clear and chlorine treatment should be employed. With regard to the distribution system, iron slugs are usually cleared by hydrant flushing. In Petitioner's case flush hydrants may be used. During my visit to the utility, I did not observe any flushing hydrants, and it may be necessary to install them to provide some means of flushing the system. Adequate flushing also clears the line of pipe encrustation that is also a source of poor water quality. Persistent iron problems may require the application of phosphate as a sequestering agent.

Q: What is the cost of the various solutions?

A: All of the foregoing iron remediation suggestions are comparatively low cost – high return methods that are common and effective treatment in the industry. Costs vary according to the treatment method used and within each procedure depending upon the extent to which it is needed. For example, one shock treatment for a well is several hundred dollars but more than one treatment may be needed. Likewise, diaphragm or hose pumps vary greatly in price depending on the style or model. A small diaphragm pump operating under normal

conditions is approximately two or three hundred dollars and phosphate cost will depend upon dosage requirement, well flow rate and runtime.

Q: What do you recommend?

A: All water utilities from time to time have water quality issues they need to address. But in Petitioner's case, the iron problem seems excessive, and it can be effectively and inexpensively remediated. Well surging with chlorine, the purchase of a diaphragm pump and the application of phosphate are all low cost options that have proven to be beneficial in other cases. Therefore, I recommend the Commission require Sugar Creek to take steps to remediate its iron issues. I also recommend the Commission require follow-up reporting on what remediation efforts are taken and whether the steps have been effective.

Q: Does this conclude your testimony?

A: Yes